CS 200

Lecture 02

Structured Word Processing — Styles

Miscellaneous Notes

Assigned reading

"The Non–Designer's Design Book," 2nd Edition, by Robin Williams (first half)

"Adobe on Basic Typography" (the cws: Resources > Related Web Links > Word Processing)

Please read and highlight BEFORE this week's lab

Assignment 2 (due Tuesday May 20 at 9:00 am)

Notes for this lecture

Today and Thursday

[named] styles

the Poke pearl

backups (the backups assignment—A00— is now online)

The Poke Pearl

What happens if you

- double-click here?
- triple-click here?
- option-click here?
- control-click here?
- command-click here?
- etc...

What happens if you

- click and drag on this?
- option-click and drag on this?
- control-click and drag on this?
- command-click and drag on this?
- etc...

Assumptions

You have used a word processor before

You understand and use correctly the following WP tools

- Word Wrap (hard carriage return vs. soft carriage return)
- Cut/Copy and Paste
- Font usage (size, style and typeface)
- Rulers and Margins
- Proper use of tabs
- Headers and footers (page numbering)
- Footnotes

Things to Think About

- What are the data objects in a Word Processor?
- Is there more than one way to do any given task?
- What are deficiencies of the interface?
- What are efficiencies of the interface?

[Named] Styles

The idea

name a collection of paragraph or character attributes

you then apply the NAME to text instead of individually setting attributes

Hence changing a document's appearance is

easier & faster, more accurate (⇒consistency, if used intelligently)

— you just change the definition of the name; everywhere it's used, text changes

Does appearance matter?

legibility

understandability

professionalism

Terminology

we will refer to Helvetica, Palatino, bold, italic, underlined, red, 15 pt leading, ... as *attributes*

a *style* is a [specific] "bundle of attributes"

eg "24 pt Myriad Pro Light with 12 pts of Before Paragraph leading & 2 cm of left indent"

but sometimes "named style" for emphasis (and/or clarity)

Compare this and the preceding slide

The idea name a collection of paragraph or character attributes you then apply the NAME to text instead of individually setting attributes Hence changing a document's appearance is easier & faster more accurate (=> consistency) Does appearance matter? legibility understandability professionalism Terminology we will refer to Helvetica, Palatino, bold, italic, underlined, red, 15 pt leading, ... as attributes a style is a [specific] "bundle of attributes" eg "24 pt Myriad Pro Light with 12 pts of Before Paragraph leading & 2 cm of left indent" but sometimes "named style" for emphasis (and/or clarity)

Indirection

The underlying concept is indirection

- referring to something through something else

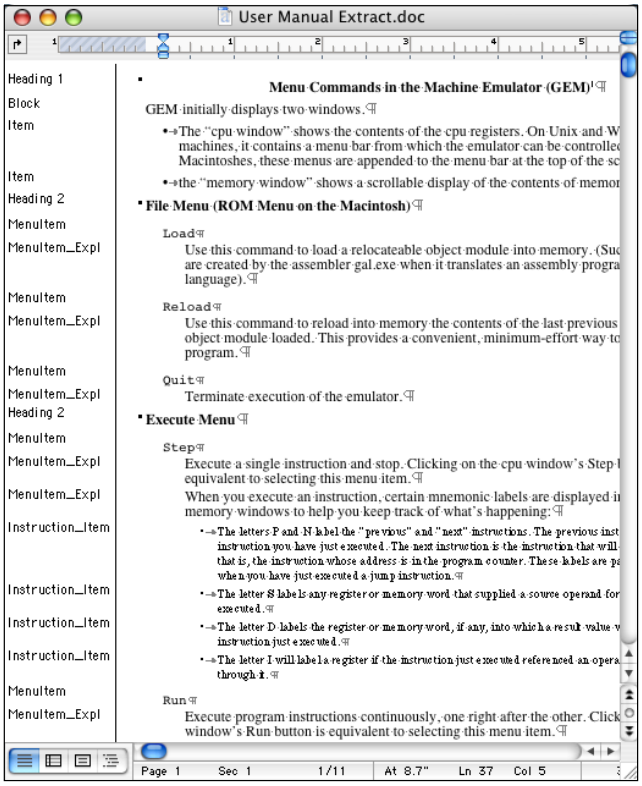
Indirection is useful in many contexts, including...

- drawing programs (object properties)
- HTML (tags in web pages; CSS)
- electronic mail (aliases, forwards)
- spreadsheets (named cells/ranges)

Remember the Model pearl?

Demo 1

The text being formatted



The style definitions (built-in & user-defined)

Block
Font:(Default) Times, 12 pt, English (US), Justified, Line spacing: single, Space Before: 6 pt, Widow/Orphan control

Block_Centered
Font:(Default) Times, 12 pt, English (US), Centered, Line spacing: single, Widow/Orphan control, No bullets or numbering

Default Paragraph Font
The font of the underlying paragraph style +

Emphasis_Slight
Default Paragraph Font + Font:Italic

Figure_Caption
Font:(Default) Times, 10 pt, English (US), Indent: Left: 0.39", Right: 0.39", Justified, Line spacing: exactly 12 pt, Space Before: 6 pt, Widow/Orphan control

Footer
Font:(Default) Times, 10 pt, English (US), Left, Line spacing: single, Widow/Orphan control, Tabs: 3.25", Centered + 6.5", Right

Footnote Reference
Default Paragraph Font + Superscript

Footnote Text
Font:(Default) Times, 10 pt, English (US), Justified, Line spacing: exactly 10 pt, Space Before: 4 pt, Widow/Orphan control

Header
Font:(Default) Times, 10 pt, English (US), Left, Line spacing: single, Widow/Orphan control, Tabs: 3.25", Centered + 6.5", Right

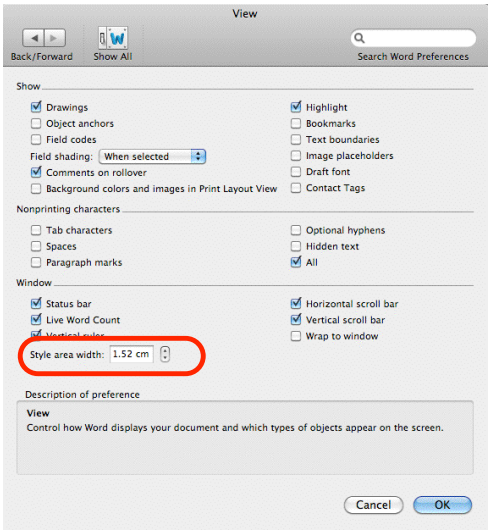
Heading 1
Style for Next Paragraph: Block, Font:(Default) Times, 12 pt, Bold, English (US), Centered, Line spacing: single, Space Before: 14 pt, Widow/Orphan control, Keep with next, Level 1

Heading 2
Style for Next Paragraph: Block, Font:(Default) Times, 12 pt, Bold, English (US), Left, Line spacing: single, Space Before: 10 pt, Widow/Orphan control, Keep with next, Level 2

Instruction

Showing Style Usage in MS Word

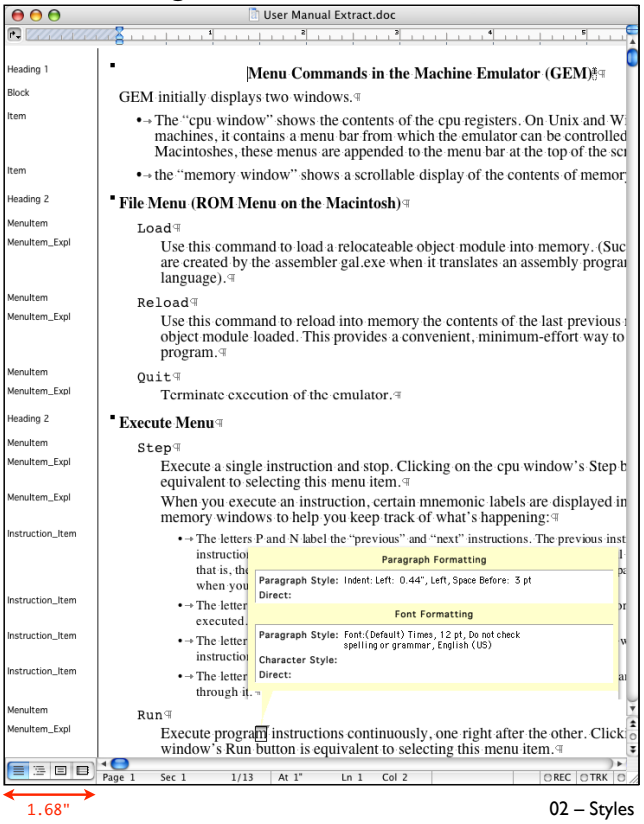
Word > Preferences...
to bring up



In Normal view, the "style area width" controls the width of the style name column in the doc display; if it's zero, the style name column vanishes.

In Normal view, View > Reveal Formatting to enable the (yellow) Formating popup

The text being formatted

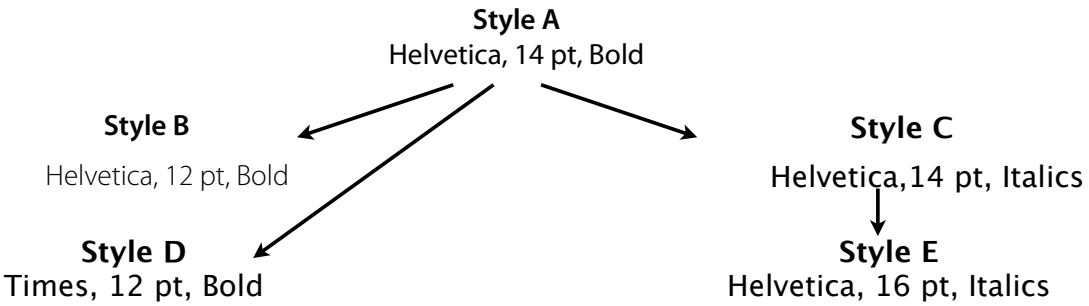


1.68"

Hierarchical Styles

The idea

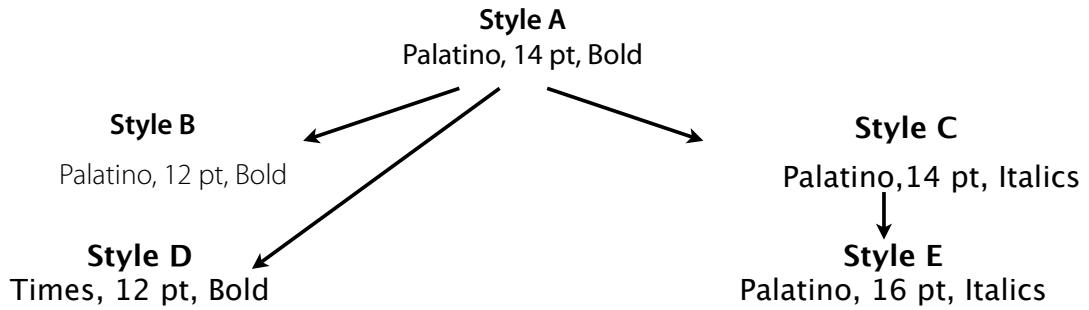
- style B is "everything style A is, except for . . ."
- style C is "everything style B is, except for . . ."
- etc.



Heirarchical Styles cont'd

When you change an attribute of A's definition

- styles *based* on A change, too, unless that attribute has been explicitly set for the derived style



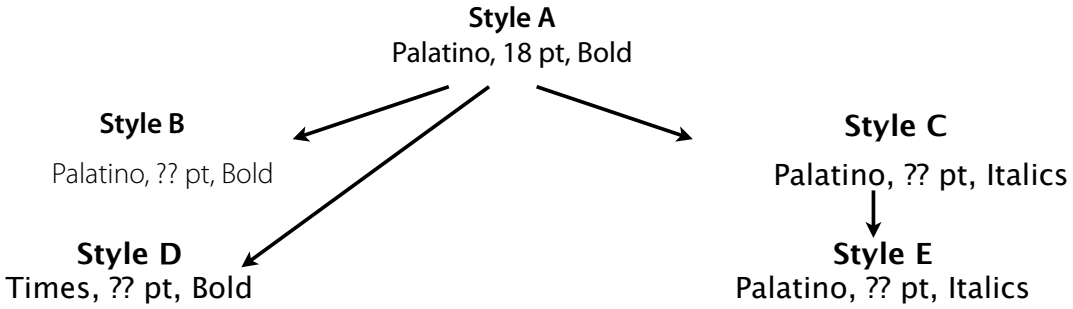
Heirarchical Styles Relativity

There are choices in how to implement some aspects of this;
eg, if I change B's font size, is the new value

- absolute (MS Word), or relative to the size of A?
- does changing A's size later automatically change B's?
- by a fixed number of points, or by a percentage?

Ditto with paragraph indents

Etc.



Hierarchical Styles — Comments

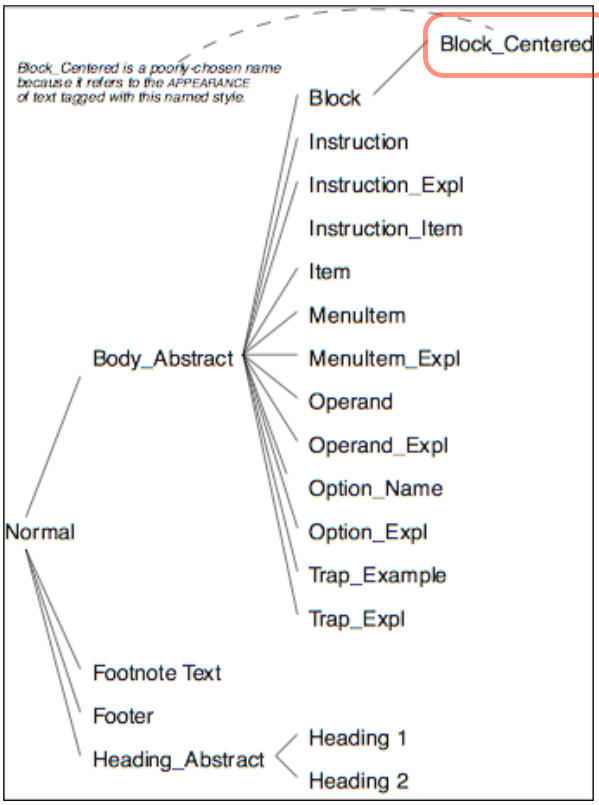
Comments

- this is a MODEL of named styles, though with parameters
- there's no point to this unless parent and child styles
  - ⋆ share some attributes
  - ⋆ but not others
- you might have a forest instead of a tree
  (our previous example had no hierarchy at all — a forest of flat trees, so to speak)

In the "Files for Styles" subfolder of "CS 200 Public" on the CS 200 network disk, compare

- User Manual Extract (Tree)
- User Manual Extract (Forest)

The Paragraph Styles Tree for User Manual Extract



A Paragraph Style Sheet for UME.doc Using Multiple Trees

Built-in styles

(The names are built-in, however the definitions have been altered)

Default Paragraph Font
The font of the underlying paragraph style +

Footer
Normal + Font:10 pt, Right: 0.25", Tabs: 3.25", Centered + 6.5", Right

Footnote Reference
Default Paragraph Font + Superscript

Footnote Text
Normal + Font:10 pt, Justified, Line spacing: exactly 10 pt, Space Before: 4 pt

Header
Normal + Tabs: 3", Centered + 6", Right

Heading 1
Style for Next Paragraph: Block
Heading_Abstract + Font:Bold, Centered, Space Before: 14 pt, Keep with next, Level 1

Heading 2
Style for Next Paragraph: Block
Heading_Abstract + Font:Bold, Space Before: 7 pt, Keep with next, Level 2

No List
No List +

Normal
Font:(Default) Times New Roman, 12 pt, English (US), Left, Line spacing: single, Space Before: 3 pt, Widow/Orphan control

Page Number
Default Paragraph Font +

Table Normal
Font:(Default) Times New Roman, 10 pt, Left, Line spacing: single, Widow/Orphan control

User-defined styles

Block
Body_Abstract + Justified, Space Before: 6 pt

Block_Centered
Block + Centered, Numbered

Body_Abstract
Normal +

Emphasis_Slight
Default Paragraph Font + Font:Italic

Figure_Caption
Body_Abstract + Font:10 pt, Indent: Left: 0.39", Right: 0.39", Justified, Line spacing: exactly 12 pt, Space Before: 6 pt

Heading_Abstract
Normal +

Instruction
Style for Next Paragraph: Instruction_Expl
Body_Abstract + Font:Courier, 11 pt, Indent: Left: 0.2", Space Before: 6 pt, Keep with next

Instruction_Expl
Body_Abstract + Indent: Left: 0.44", Numbered

Instruction_Item
Style for Next Paragraph: Instruction_Expl
Body_Abstract + Font:10 pt, Indent: Left: 0.63", Hanging: 0.19", Line spacing: exactly 12 pt

Item
Body_Abstract + Indent: Left: 0.19", Hanging: 0.19", Space Before: 6 pt

MenuItem
Body_Abstract + Font:Courier, 11 pt, Indent: Left: 0.19", Line spacing: exactly 12 pt, Space Before: 9 pt, Numbered

MenuItem_Expl
Body_Abstract + Indent: Left: 0.44"

Operand
Body_Abstract + Indent: Left: 0.25"

Operand_Expl
Body_Abstract + Indent: Left: 0.56", Space Before: 6 pt

• • •

Demo 2!

Character Styles

Should character attributes be part of a paragraph style definition?

Are character styles hierarchical?

- yes in MS Word
- no in FrameMaker
- yes in Nisus Writer Express & Nisus Writer Pro
- yes in Adobe InDesign

Are character styles used to specify the (default) character attributes of paragraph styles?

- no in MS Word
- optionally in Nisus Writer Express & Pro

Incidentally, if you own a Mac, Nisus Writer Pro is a very nice $39 US (ed) word processor (www.nisus.com).

Tables-of-Contents (TOCs)

What's our model of a TOC? (example on the next slide)

Steps to create a table-of-contents

- identify paragraph styles from which to build the TOC

  eg Heading 1, Heading 2, Heading 3, etc, in Word
- specify a TOC style for each TOC level

  TOC 1, TOC 2, TOC 3, etc, in Word
- build the TOC (most word processors do this for you)

  copy paragraphs with specified paragraph style tags into the TOC

  apply the corresponding TOC style to each

  Heading 1 to TOC 1, Heading 2 to TOC 2, Heading 3 to TOC 3, etc.

  append a tab character & page number to each
- modify the TOC styles to get the desired layout
- rebuild the TOC whenever appropriate

Note the application of two distinct styles to each piece of text

Demo 3!

Demo — The TOC for User Manual Extract

Menu Commands in the Machine Emulator (GEM)[1]

GEM initially displays two windows.

- The "cpu window" shows the contents of the cpu registers. On Unix and Windows machines, it contains a menu bar from which the emulator can be controlled. (On Macintoshes, these menus are appended to the menu bar at the top of the screen.)
- the "memory window" shows a scrollable display of the contents of memory.

File Menu (ROM Menu on the Macintosh)

`Load`

Use this command to load a relocateable object module into memory. (Such "rom files" are created by the assembler gal.exe when it translates an assembly program into machine language).

`Reload`

Use this command to reload into memory the contents of the last previous relocateable object module loaded. This provides a convenient, minimum-effort way to re-execute a program.

`Quit`

Terminate execution of the emulator.

Execute Menu

`Step`

Execute a single instruction and stop. Clicking on the cpu window's Step button is equivalent to selecting this menu item.

When you execute an instruction, certain mnemonic labels are displayed in the cpu and memory windows to help you keep track of what's happening:

- The letters P and N label the "previous" and "next" instructions. The previous instruction is the instruction you have just executed. The next instruction is the instruction that will be executed next, that is, the instruction whose address is in the program counter. These labels are particular useful when you have just executed a jump instruction.
- The letter S labels any register or memory word that supplied a source operand for the instruction just executed.
- The letter D labels the register or memory word, if any, into which a result value was stored by the instruction just executed.
- The letter I will label a register if the instruction just executed referenced an operand indirectly through it.

`Run`

Execute program instructions continuously, one right after the other. Clicking on the cpu window's Run button is equivalent to selecting this menu item.

Table of Contents

Table of Contents 1

Menu Commands in the Machine Emulator (GEM) 2

File Menu (ROM Menu on the Macintosh) 2

Execute Menu 2

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Instruction Register 4

Memory 4

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Flow-of-Control 9

Pseudo-Instructions 10

The Trap Instruction 12

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Trap #2 — Write an integer to the listing and to the display, base 10 12

Trap #3 — Write an integer to the listing, base 10 12

Trap #4 — Write an integer to the listing and to the display, in some radix 13

Trap #5 — Write an integer to the listing, in some radix 13

Trap #6 — Read a string 13

Trap #7 — Write a string to the display and to the listing 13

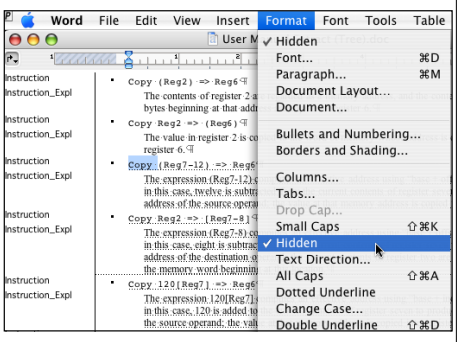
Trap #8 — Write a string to the display and to the listing 14

Comments 14

Conditional Text

Display or not display
Print or not print

- in MS Word these are separate attributes
- is that a good idea?



Look up "Hidden Text" in Word's help index

Word only implements one class of conditional text

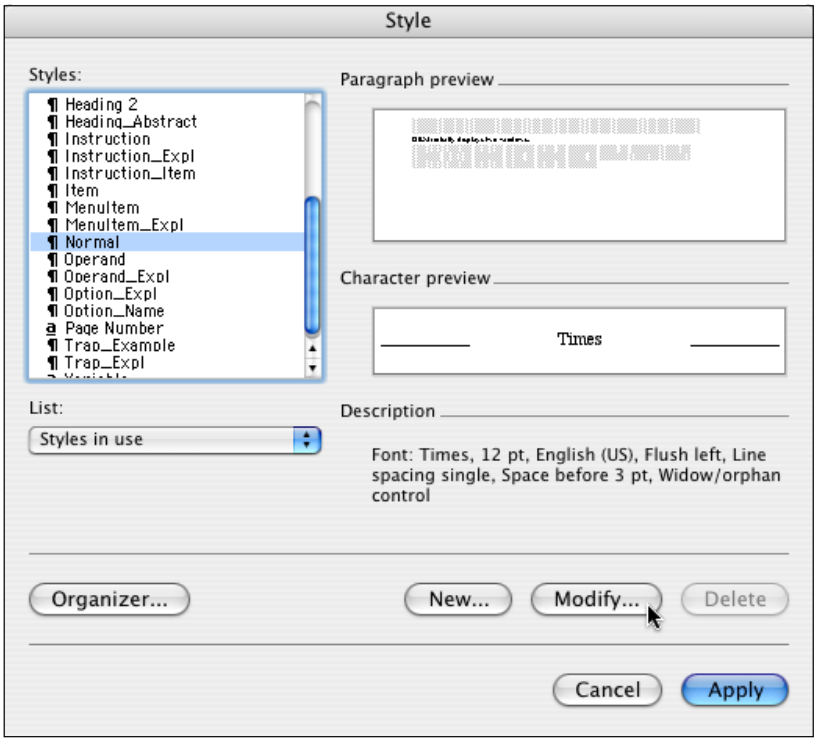
- but it makes sense to have more
- you can simulate having more than one class of conditional text using named styles

How would you do this?

Demo 4!

The Format > Style… Dialog in Word

Format → Style...



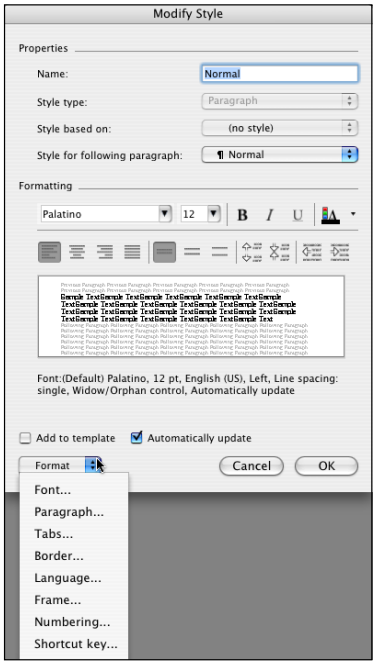
Interaction techniques

A preview checkbox would be better. & everywhere— not just here.

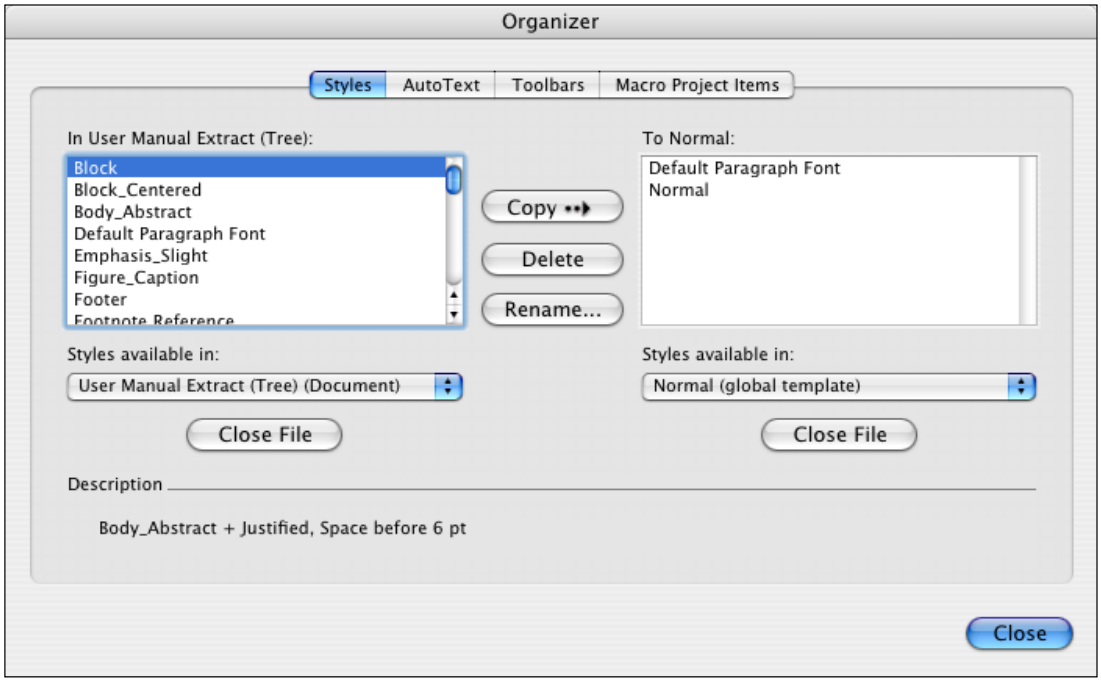
The Format > Style... > Modify Sub-Dialog

Recall the Model Pearl (interaction)

- Nested dialog boxes
  + radio buttons, check boxes, etc.
- Which is better? Should you have both?



The Format > Style... > Organizer Sub-Dialog

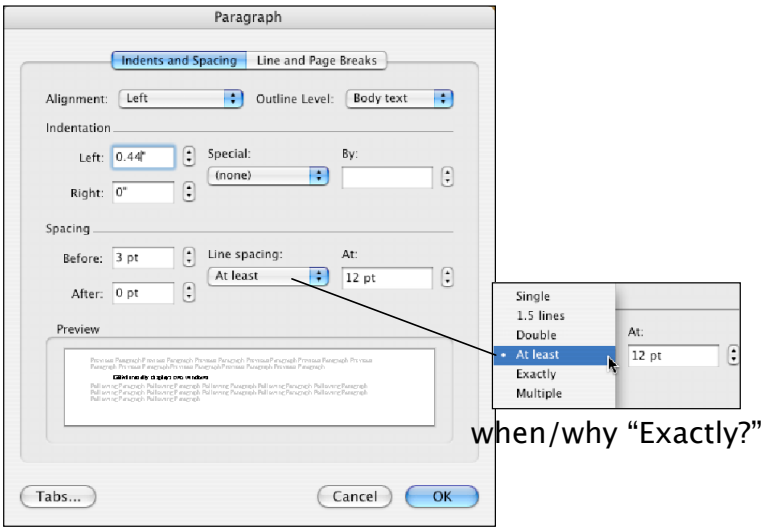


Word's Format > Paragraph Dialog Box

Not all paragraph attributes are available in this dialog

e.g. bullets, borders...

although they belong here

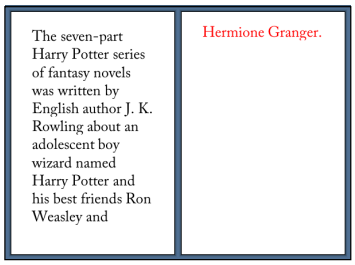


when/why "Exactly?"

Widows and Orphans

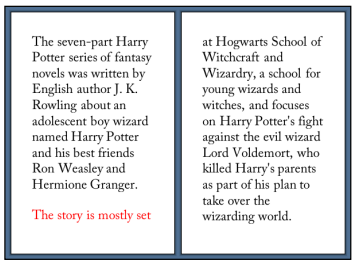
Widow

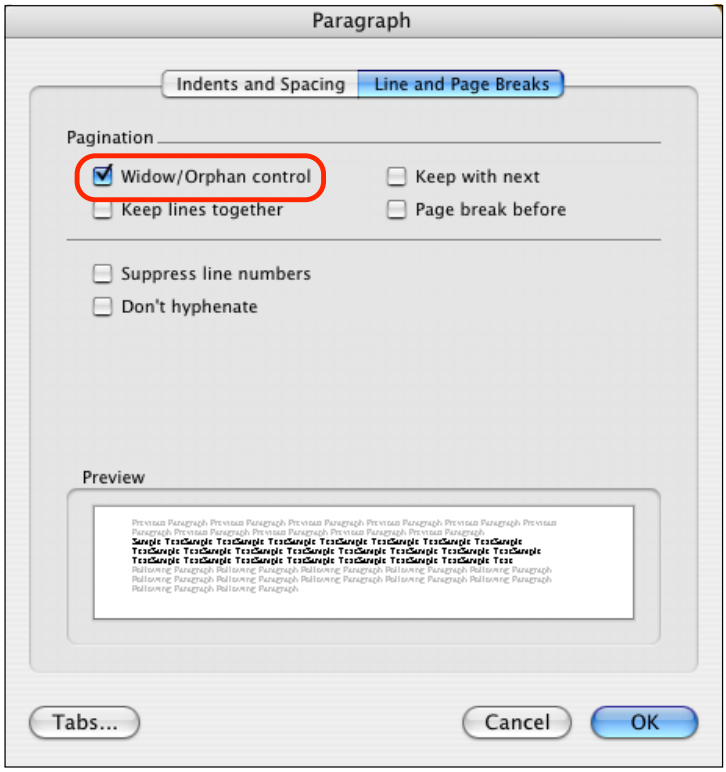
stranded line at top of page


The seven-part Harry Potter series of fantasy novels was written by English author J. K. Rowling about an adolescent boy wizard named Harry Potter and his best friends Ron Weasley and
Hermione Granger.

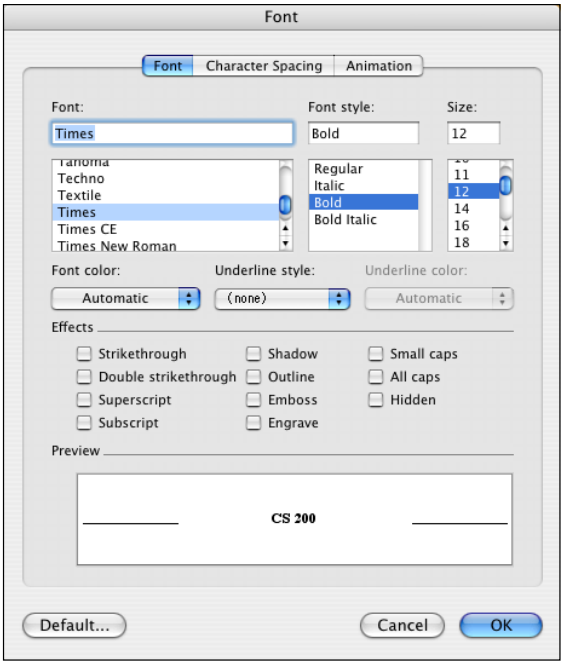
Orphan

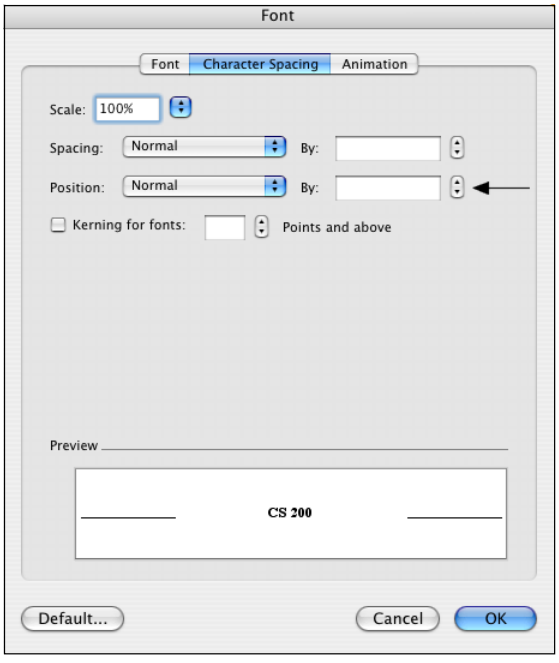
stranded line at bottom of page


The seven-part Harry Potter series of fantasy novels was written by English author J. K. Rowling about an adolescent boy wizard named Harry Potter and his best friends Ron Weasley and Hermione Granger.
The story is mostly set
at Hogwarts School of Witchcraft and Wizardry, a school for young wizards and witches, and focuses on Harry Potter's fight against the evil wizard Lord Voldemort, who killed Harry's parents as part of his plan to take over the wizarding world.



Word's Format > Font... (ie Character) Dialog Box





Style Templates

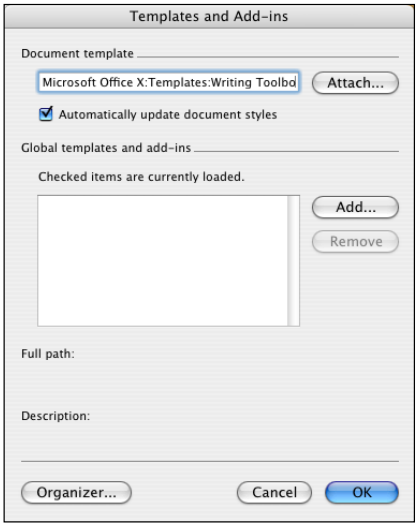
Store style definitions in a separate "template" or "style sheet" file

Use templates to keep styles consistent across multiple documents

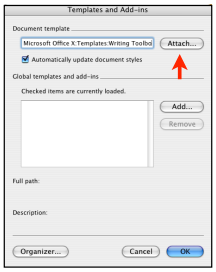
- each such document is linked to the template
- when the template is changed, the appearance of every linked document
  - ⋆ changes automatically? (optional in MS Word)
  - ⋆ or do you have to ***request*** an update? (Keynote)

Another data model...

Tools → Templates and Add-ins…



Style Templates in MS Word



Every document is based on a template ("Normal" by default)

- apparently in the "~ / Documents / Microsoft User Data / " folder... (instead of ~ / Library / Application Support / Microsoft ... sigh)
- whose styles are copied to the document

To use a different base template

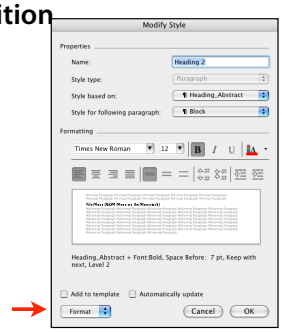
- use the "Attach" button in the Tools → Templates and Addins... dialog box

To have Word reload the template's styles every time you open the document

- check "Automatically Update Document Styles" in the Tools → Templates and Addins... dialog box

To cause a style change applied in a document to update its template definition

- Use the "Add to template" button in the Modify Styles dialog box, or change it directly in the template



Naming Named Styles

Style names should reflect function, not appearance

"Quotation" not "Indented Paragraph"

"Emphasis" not "Bold"

"List Item" not "Bulleted Paragraph"

Style names

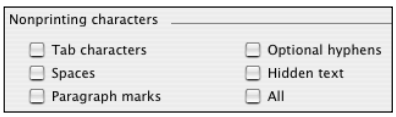
should be chosen **logically**

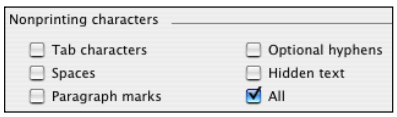
— **NOT** based on their appearance

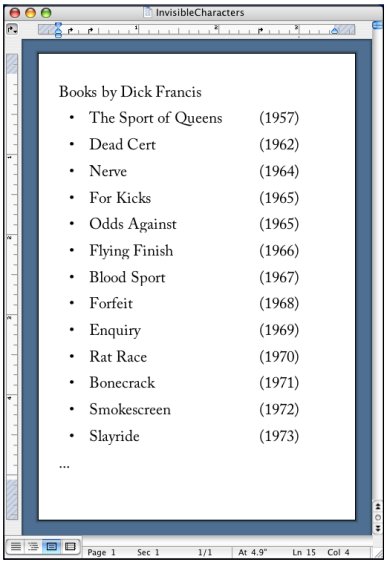
so if you change the appearance,
you don't have to change the name
to avoid confusion

"Invisible" (aka "non-printing") characters

See Word's Preferences - View dialog







Things That May Confuse You in MS Word

Character attributes in paragraph styles

- are a matter of convenience
- when done, one set of char attributes is a property of the paragraph AS A WHOLE

The Style Column

- is visible only in Normal View

Some paragraph attributes

- are in "auxiliary" dialog boxes instead of the paragraph dialog box even though they ARE paragraph attributes
- e.g. borders, bullets, numbering, shading

Paragraph attributes

- are "stored in" the ¶ at the end of each paragraph
- are automatically copied to a new paragraph if you press RETURN
- you can copy/paste this character to transfer its attributes to another paragraph

The Case For Styles

It's easier / quicker to change

- the appearance of an existing document
- determine the appearance of a conforming document

They make it easier to achieve consistent appearance

- within a document
- using templates, across documents

You can switch media much more easily

The Case Against

It takes longer to get started

Application Interface and Design

In well-designed applications you can do everything via

- menu items
- dialog boxes opened by a menu item
- a toolbar opened from a menu item

— Why?

Often there are other ways of doing things

- typically faster but more obscure

— Why?

Are there other ways to

- DEFINE named styles in Word?
- APPLY named styles In Word?

Explore the Styles pull-down in the Formatting toolbar

- (The Poke pearl)

Styles & Style Templates (aka "Style Sheets") Elsewhere

These ideas are applicable *anywhere you have objects with attributes,*
though the term may not be used

- graphics applications
- printing
- web pages

Huh? Think about this...

So look for them!

Next week

Pixel Graphics

Bring a photo, or have a digital photo ready for lab next week.